Gabapentin

Cat. No.: A8436
CAS No.: 60142-96-3
Formula: C9H17NO2
M.Wt: 171.24

Target: Neuroscience
Pathway: GABA Receptor
Storage: Store at -20°C

Solvent & Solubility

≥2.6 mg/mL in EtOH; ≥25.85 mg/mL in H2O; insoluble in DMSO

<table>
<thead>
<tr>
<th>Preparing</th>
<th>Mass</th>
<th>1mg</th>
<th>5mg</th>
<th>10mg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solvent</strong></td>
<td><strong>Concentration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 mM</td>
<td>5.8398 mL</td>
<td>29.1988 mL</td>
<td>58.3976 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>1.1680 mL</td>
<td>5.8398 mL</td>
<td>11.6795 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.5840 mL</td>
<td>2.9199 mL</td>
<td>5.8398 mL</td>
</tr>
</tbody>
</table>

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary: GABA enhancer

IC₅₀ & Target

Cell Viability Assay

<table>
<thead>
<tr>
<th>Cell Line</th>
<th>Pyramidal neocortical cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method:</td>
<td>Limited solubility. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.</td>
</tr>
<tr>
<td>Reacting conditions:</td>
<td>10 µM</td>
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</table>
Gabapentin inhibited calcium currents in pyramidal neocortical cells (up to 34%). The gabapentin-mediated inhibition of calcium currents saturated at particularly low concentrations (around 10 μM), at least in neocortical neurons (IC50 about 4 microM).

### Applications

- Gabapentin inhibited calcium currents in pyramidal neocortical cells (up to 34%).

### Animal experiment

<table>
<thead>
<tr>
<th>Animal models</th>
<th>Oral administration, 10-100 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat model of neuropathic pain dynamic allodynia, rat model of brain demyelination evoked by intracerebral injection (i.c.i) of ethidium bromide</td>
<td>In the rat model of neuropathic pain dynamic allodynia, gabapentin (10-100 mg/kg, p.o.) dose-dependently blocked both types of allostynia. The intrathecal administration of gabapentin dose-dependently (1-100 μg/animal) blocked both static and dynamic allostynia. Administration of similar doses of gabapentin into the hind paw failed to block these responses. In a rat model of brain demyelination evoked by intracerebral injection (i.c.i) of ethidium bromide, gabapentin administered at 300 mg/kg increased cortical MDA by 66%. Gabapentin decreased GPx activity by 54.3%. Gabapentin decreased nitrite by 21.4% and 29.2% at 100 and 300 mg/kg, respectively. Gabapentin increased AChE activity increased by 28.6% and 69.3% at 100 and 300 mg/kg, respectively. Gabapentin decreased paraoxonase activity by 83.3% and 73% at 100 and 300 mg/kg, respectively.</td>
</tr>
</tbody>
</table>

### Other notes

- Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

### References

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NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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